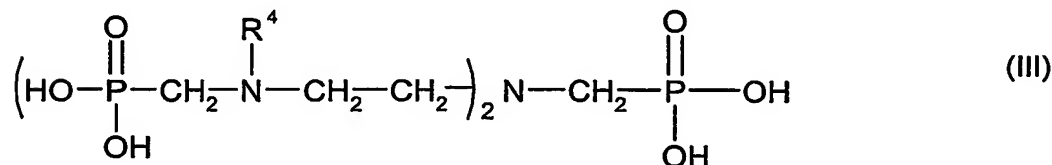


WHAT IS CLAIMED IS:

1. A process for the flame-retardant treatment of a fiber product which contains from 20 to 100% by weight of cellulose fibers, based on the weight of the anhydrous fiber product, the fiber product or preferably a precursor thereof being treated in succession or simultaneously with a component A and a component B, component A being a branched polyethylenimine which contains primary, secondary and tertiary amino groups and which has a weight average molecular weight in the range from 5000 to 1 500 000, preferably from 10 000 to 1 000 000, and in which the numerical ratio of secondary amino groups to primary amino groups is in the range from 1.00 : 1 to 2.50 : 1 and the numerical ratio of secondary amino groups to tertiary amino groups is in the range from 1.20 : 1 to 2.00 : 1, or component A being a mixture of such polyethylenimines, component B being a phosphonic acid of the formula (I), (II) or of the formula (III)



in which, in the formulae (I), (II) or (III), in up to 50% of the OH groups bonded to phosphorus the hydrogen atom may be substituted by an alkali metal or an ammonium group, but preferably 100% of these OH groups being present in unneutralized form, or component B being a mixture of compounds which are selected from compounds of the formulae (I), (II) or (III),

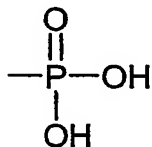
in which

y may assume the values 0, 1 or 2 and preferably has the value 0,

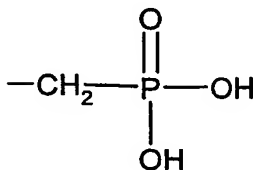
R¹ is H or OH,

R is a linear or branched alkyl radical which contains 1 to 7 carbon atoms when R¹ is OH

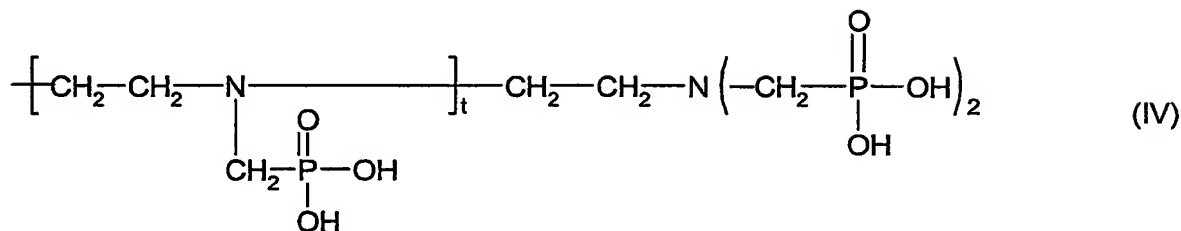
and 3 to 7 carbon atoms when R¹ is H,
R² being



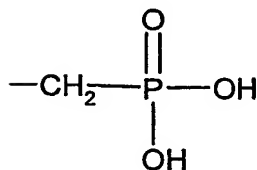
R³ being H or R², preferably R², and
all radicals R⁴, independently of one another, being H or



5 or being a radical of the formula (IV)

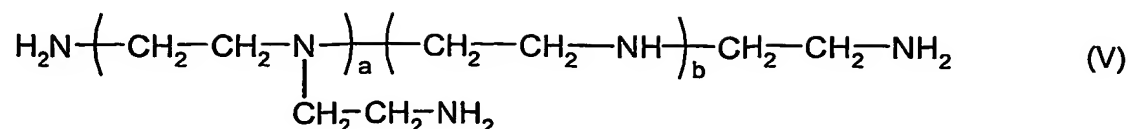


it being preferable if from 50 to 100% of all radicals R⁴ present are



t being 0 or a number from 1 to 10.

- 10
2. The process as claimed in claim 1, characterized in that component B is a mixture of phosphonic acids of the formula (I) and of the formula (II), both of which are present in completely unneutralized form.
 3. The process as claimed in claim 1 or 2, characterized in that component A is a polyethylenimine which is formed by polymerization of ethylenimine and which has the following structure (formula (V))



the polymerization optionally being acid-catalyzed,

it being possible for the individual units which contain tertiary amino groups and the individual units which contain secondary amino groups to be arbitrarily distributed over the polymer chain,

- 5 b being greater than a and a and b having values such that the conditions, mentioned in claim 1, for the molecular weight and for the numerical ratios of the amino groups to one another are fulfilled
or component A being a mixture of such polyethylenimines.
- 10 4. The process as claimed in one or more of claims 1 to 3, characterized in that the weight ratio of the amount of component A applied to the fiber product or to the precursor thereof to the amount of component B applied is in the range from 1 : 1.3 to 1 : 4.0.
5. The process as claimed in one or more of claims 1 to 4, characterized in that component A and/or component B are applied in the form of a mixture with water to the fiber product or to a precursor thereof.
- 15 6. The process as claimed in one or more of claims 1 to 5, characterized in that the precursor of the fiber product is present as an aqueous suspension of fibers.
7. The process as claimed in one or more of claims 1 to 6, characterized in that neither component A nor component B contains metals or metal compounds.
- 20 8. The process as claimed in one or more of claims 1 to 7, characterized in that, in addition to the components A and B, polymaleic acid or partly neutralized polymaleic acid and/or a partial ester of orthophosphoric acid is also applied to the fiber product or the precursor thereof.
- 25 9. The process as claimed in one or more of claims 1 to 8, characterized in that a precursor of the fiber product is treated simultaneously or in succession with a component A and a component B, the component A preferably being applied earlier than the component B, and that this precursor is then further processed under the action of heat and pressure to give a fiberboard or pressboard, this fiberboard or pressboard is then comminuted and is washed with water which contains one or more inorganic salts, then treated again with a component B and further processed under the action of heat and pressure to give a fiberboard and
30 pressboard.